PEACE/WILLISTON
FISH & WILDLIFE
COMPENSATION
PROGRAM

BC hydro

BRITISH
COLUMBIA

A Reconnaissance Survey Of Dina Lake (#7)

A. R. McLean
1991

PWFWCP Report No. 105

105-02902/

The Peace/Williston Fish & Wildlife Compensation Program is a cooperative venture of BC Hydro and the provincial fish and wildlife management agencies, supported by funding from BC Hydro. The Program was established to enhance and protect fish and wildlife resources affected by the construction of the W.A.C. Bennett and Peace Canyon dams on the Peace River, and the subsequent creation of the Williston and Dinosaur Reservoirs.

Peace/Williston Fish and Wildlife Compensation Program, 1011 Fourth Ave. 3rd Floor, Prince George B.C. V2L 3H9

Website: *www.bchydro.bc.ca/environment/initiatives/pwcp/*

This report has been approved by the Peace/Williston Fish and Wildlife Compensation Program Fish Technical Committee.

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A RECONNAISSANCE SURVEY OF

DINA LAKE (#7)

WATERSHED: Parsnip River

DATE OF SURVEY: June 4. 5. 1991

FIELD CREW LEADER: A.R. McLean

FIELD ASSISTANT: A.R. Langston

WILLISTON/PEACE FISHERIES
COMPENSATION PROGRAM

B. C. HYDRO

ENVIRONMENTAL RESOURCES

and

B.C. ENVIRONMENT

RECREATIONAL FISHERIES BRANCH

REPORT PREPARED BY: A.R. McLean

REPORT EDITED BY: A.R. Langston/B.G. Blackman

RELEASED BY: _____

D.H.G. Ableson, Regional Fisheries Biologist

LAKE: **Dina #7**

SYSTEM NAME: --

A.S.A.P. REFERENCE NO.:

SYSTEM NO: 230-9033-051-473-389

DATA ON FILE FOR THIS SURVEY

Location	X	Dissolved 02/Temp. Profiles	X
Physical Data	X	Winter Dissolved 02/Temp. Profiles	X
Bench Mark	X	Netting Record	X
Terrain Features	X	Lake Catch Summary	X
Access	X	Individual Fish Data	--
Resorts and Campsites	X	Fish Preserved	--
Other Developments	X	Stomach Analysis	--
Obstructions and Pollutions	X	Scale Reading	--
Special Restrictions	X	Location of Inventory Sites	X
Aquatic Plants	X	Photograph Directory	X
Wildlife Observations	X	Appendices:	
Miscellaneous Comments	X	A: Water Chemistry Analysis	X
Lake Drainage	X	B: Tributary Stream Data	--
Fisheries Management Comments	X	Bathymetric Map Reduction	X
History of Previous Surveys	X	Bathymetric Map	X
Water Chemistry Summary	X		

LOCATION

Location: 25 km north, north west of Mackenzie
Elevation: 686 m +/-
Latitude/Longitude: $55^{0}31'13":123^{0}17"23'$ U.T.M.: 10.4818.61526
Management Unit: 7-30 N.T.S. Map No.: 93-0/11

Drainage: Closed System

PHYSICAL DATA

Lake Drainage Area:	--	km^2	Volume:	356000	m^3
Water Surface Area:	69300	m^2	Flushing Rate:	--	
Area above 6 m contour:	38500	m^2	Perimeter of Islands:	--	m
Shoreline Perimeter:	1000	m	Number of Islands:	0	
Maximum Depth:	11.7	m	Mean Depth:	5.1	m
Filterable Residue (TDS):	96	mg/l	Secchi Reading:	9.65	m

Sounding Device: Lowrance X-15

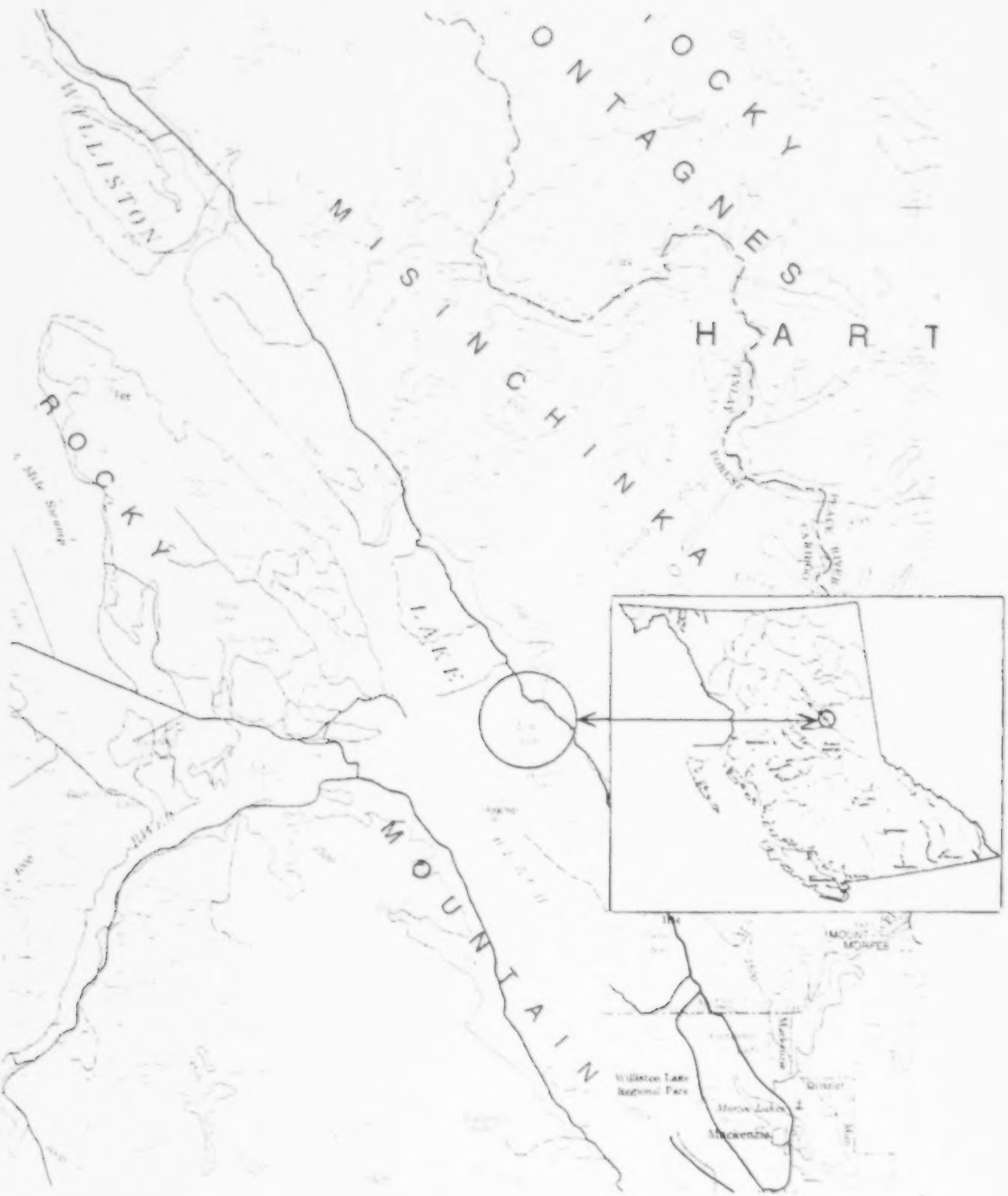
Elevation Source: Contour interpolation

BENCHMARK

(Iron spike, center of red circle) located on the northeast shore, 1.0 m from water's edge, in a 49 cm diameter, spruce tree. Benchmark is set 2.0 m above current lake level.

High water mark: Lake appears to be at maximum pondage.

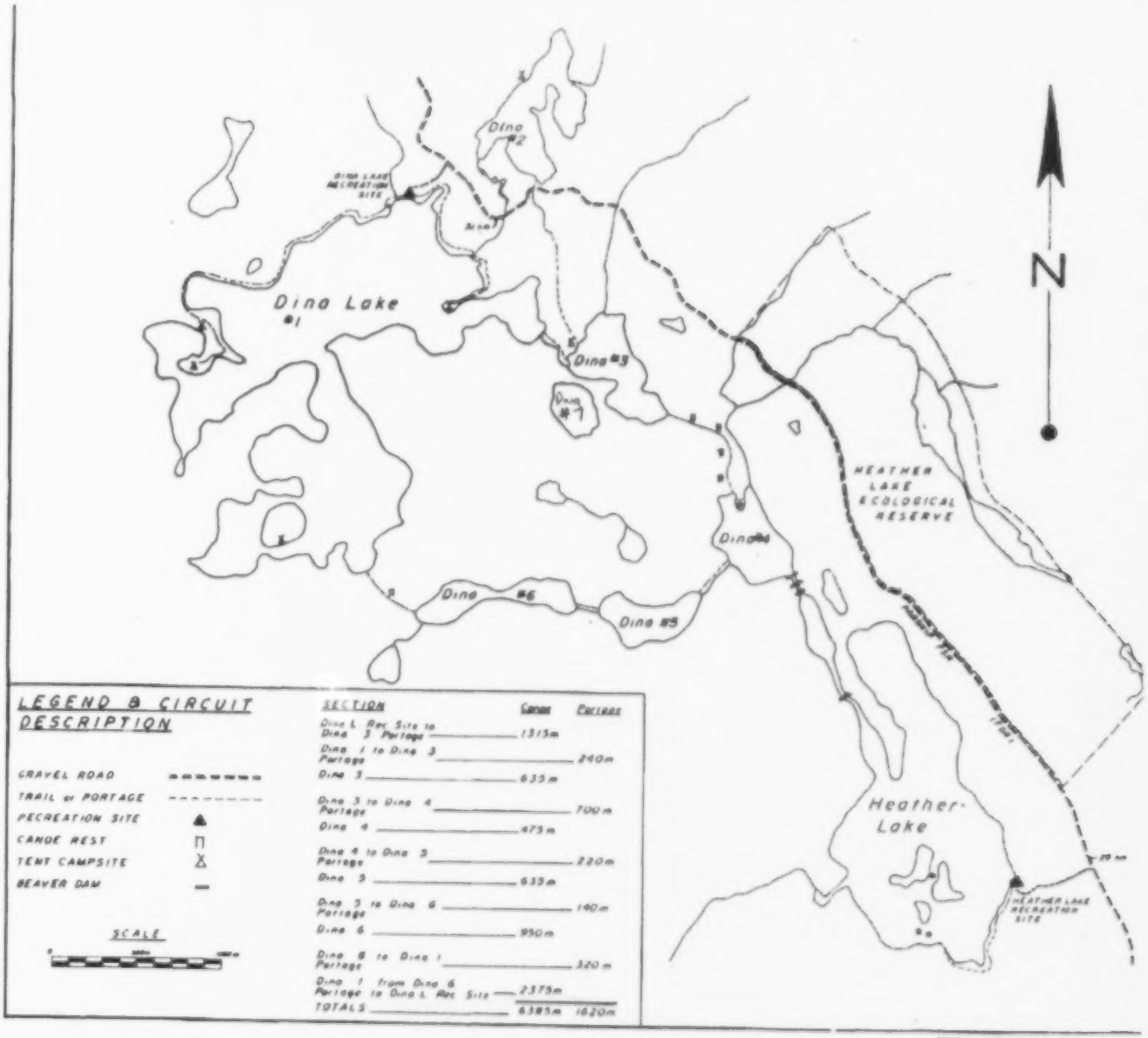
Location of Dina Lakes Scale 1:250 000



Forest Service

Recreation Sites

Heather - Dina Lakes Canoe Circuit



LEGEND & CIRCUIT DESCRIPTION

GRAVEL ROAD	▬▬▬
TRAIL or PORTAGE	- - - -
RECREATION SITE	▲
CANOE REST	⊓
TENT CAMPSITE	⧖
BEAVER DAM	—

SCALE

SECTION	Canoe	Portage
Dina L Rec Site to Dina 3 Portage	1315m	
Dina 1 to Dina 3 Portage		240m
Dina 3	635m	
Dina 3 to Dina 4 Portage		700m
Dina 4	475m	
Dina 4 to Dina 5 Portage		220m
Dina 5	635m	
Dina 5 to Dina 6 Portage		140m
Dina 6	950m	
Dina 6 to Dina 1 Portage		320m
Dina 1 from Dina 6 Portage to Dina L Rec Site	2375m	
TOTALS	6385m	1620m

Lake: **Dina #7**

TERRAIN FEATURES

Immediate Shoreline:

The lake shore slope is low to moderate, with the north and southeast ends steeply sloped. A sparse fringe of small bushy alder fronts the shoreline. The shoreline substrate consists primarily of fines (80%), with some organics and small cobble patches noted. A large amount of woody debris and deadfall is strewn along the lake shore, limiting recreational access to and from the lake. The low sloping northeast shore provides the best recreational access. Lake bottom drops off moderately from shore.

Surrounding Country:

A thick shrub undergrowth extends into the forest, which is set back approximately 50 m from water's edge. The forest cover is complete except for a 75 m ridge on the northeast slope, which is sparsely populated with trembling aspen and cottonwood. The forest cover is mature, first growth and primarily consists of trembling aspen and spruce, with low amounts of birch and cottonwood noted. Dina Lake #7 is surrounded by gently rolling terrain and is situated within the sub-boreal spruce biogeoclimatic zone.

Lake: **Dina #7**

ACCESS

Directions:

Dina Lake #7 is approximately a five (5) minute helicopter flight from a cutblock, located 31.6 km north of Mackenzie on the Parsnip River Forest Service Road (also known as the Finlay Forest Road).

Alternately, one can drive north 28.6 km from Mackenzie to the Dina Lake Recreation Site (B.C. Forest Service) and gain access into the Lake via the "Dina Lakes Canoe Circuit".

Dina Lake #7 is approximately a 1.2 km hike by trail from Dina Lake #2.

Road Type and Conditions:

None.

Restrictions:

None noted.

RESORTS AND CAMPSITES

None, however discussions are in progress with the Mackenzie Forest Service with regards to:

1. Incorporating this lake into the Dina Lakes Canoe Circuit.
2. Creation of a one or two site camping and picnicking area on the northeast end which is low-lying and clear of large trees (see photograph).

OTHER DEVELOPMENTS

None.

Lake: **Dina #7**

OBSTRUCTIONS AND POLLUTIONS

None.

SPECIAL RESTRICTIONS

None noted.

AQUATIC PLANTS

Aquatic plants were sparsely located around the lake shore. The following species were identified in the field. None were collected.

sedge grass
Nuphar sp.
Ceratophyllum sp.

WILDLIFE OBSERVATIONS

1 female common goldeneye	1 grouse
2 male buffleheads	12 bonapartes gulls
1 female bufflehead	3 Canada geese
2 male mallards	6 blackbirds
1 female mallard	12 common nighthawks
1 rufous hummingbird	1 beaver

MISCELLANEOUS COMMENTS

1. Gammarus (mean length 2.5 cm) were abundant, visual observations indicated concentrations varying from nil to 8/m^3. Two gillnet panels (38mm and 64mm) were covered with Gammarus and approximately 12 Gammarus were noted on each cork float.
2. Zooplankton heavily concentrated (visibly) from surface to 2.0 m, also noted in Vandorn (11m).
3. Numerous aquatic leeches observed (up to 10cm length).
4. A management plan, encompassing all the Dina Lakes, has been produced by D.A. Jesson, Recreational Fisheries Branch, BC Environment, Prince George.
5. Bathymetric map: The lake outline is from an enlargement of aerial photograph B.C. 7327 No. 121, flown July 1971.

Lake: **Dina #7**

LAKE DRAINAGE

General:
Closed system.

Major Systems:
None.

Minor Systems:
None.

FISHERIES MANAGEMENT COMMENTS

Dina Lake #7 is barren of all fish species and has no inlets or outlets. Suitable brook trout spawning substrate was noted near shore. High densities of Gammarus were observed during the survey. Oxygen/temperature series taken during the winter of 1990/91 indicate suitable levels for overwintering fish.

Dina Lake #7 is capable of supporting a low use brook trout or rainbow trout fishery.

HISTORY OF PREVIOUS SURVEYS

Lake Surveys:

An oxygen/temperature series was collected on March 18, 1991, by A.R. McLean, Williston/Peace Fisheries Compensation Program, Prince George.

Other Related Surveys:
None known.

Lake: **Dina #7**

WATER CHEMISTRY SUMMARY **Limnology Station No. 1**

Field Conditions:

Date:	June 5, 1991		
Time:	0915 hrs	Air Temperature:	10.5 °C
Wind Velocity:	15 km/hr	Wind Direction:	south
Cloud Cover:	10/10 o.c.	Surface Condition:	light ripple
Secchi Disc:	9.65 m	Water Colour:	greenish tinge

Method(s) Used:

Dissolved Oxygen:	YSI model 58 oxygen/temperature meter
Water Temperature:	YSI model 58 oxygen/temperature meter
Air Temperature:	Hand-held alcohol thermometer
Ph (field):	Digital pH pocket tester
H2S (field):	Hach H2S field test kit
Laboratory Used:	Zenon Environmental Inc. B.C. Laboratory Services
Water Sampler:	Verticle Alpha Water Bottle (Vandorn)
Substrate Sampler:	Substrate sample not taken

Water Sample Chemistry: SEAM Site No.: Not determined

	Sampling Depths			
	Surface (O m)		Lower (11.0 m)	
pH (field)	8.4		8.0	
pH (lab)	7.9		7.7	
Specific Conductance (lab)	167	umhos/cm	195	umhos/cm
Filterable Residue 105°C (lab)	96	mg/l	114	mg/l
H2S (field)		mg/l	0.0	mg/l

Bottom Depth:	11.5	m
Substrate Sample Depth:		m

NOTE: Water samples were too long in transit to guarantee accuracy of lab pH results.

Lake: **Dina #7**

DATE: June 5, 1991

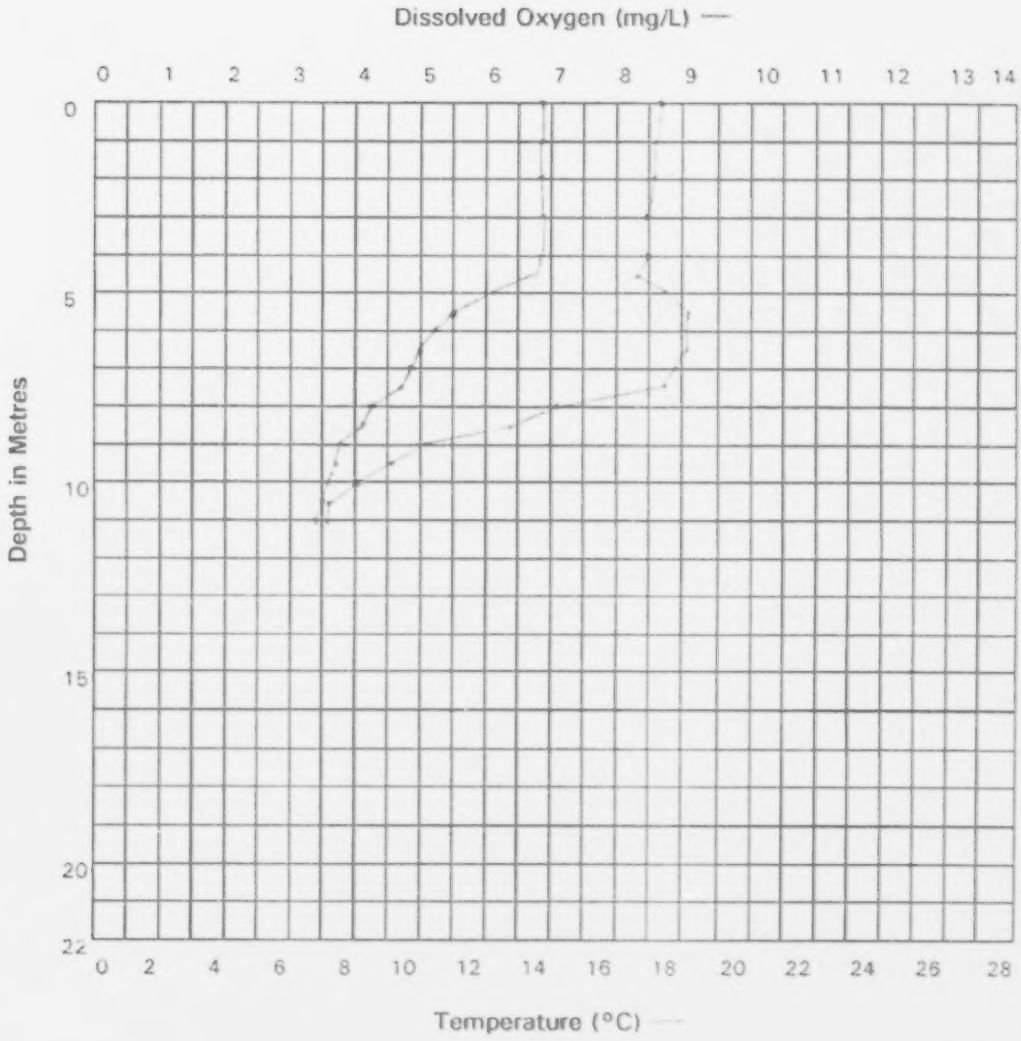
SUMMER OXYGEN/TEMPERATURE DATA

DEPTH (m)	02 (mg/l)	TEMP (°C)
Surface	8.7	13.8
1.0	8.6	13.8
2.0	8.6	13.8
3.0	8.5	13.8
4.0	8.5	13.8
4.5	8.3	13.6
5.0	8.8	12.2
5.5	9.2	11.0
6.0	9.1	10.4
6.5	9.1	10.0
7.0	8.9	9.7
7.5	8.7	9.4
8.0	7.1	8.6
8.5	6.4	8.2
9.0	5.1	7.6
9.5	4.6	7.4
10.0	4.0	7.1
10.5	3.6	7.0
11.0	3.6	6.8
11.5	Bottom	

Lake: **Dina #7**

SUMMER

DISSOLVED OXYGEN AND TEMPERATURE SERIES



Lake: **Dina #7**

DATE:	March 18, 1991	CREW:	A.R. McLean
Time:	1600 hrs	Snow depth:	4 cm
Air temp.:	12 °C	Ice Depth:	67 cm
Wind:	light-moderate	Weather:	clear/sun

WINTER OXYGEN/TEMPERATURE DATA

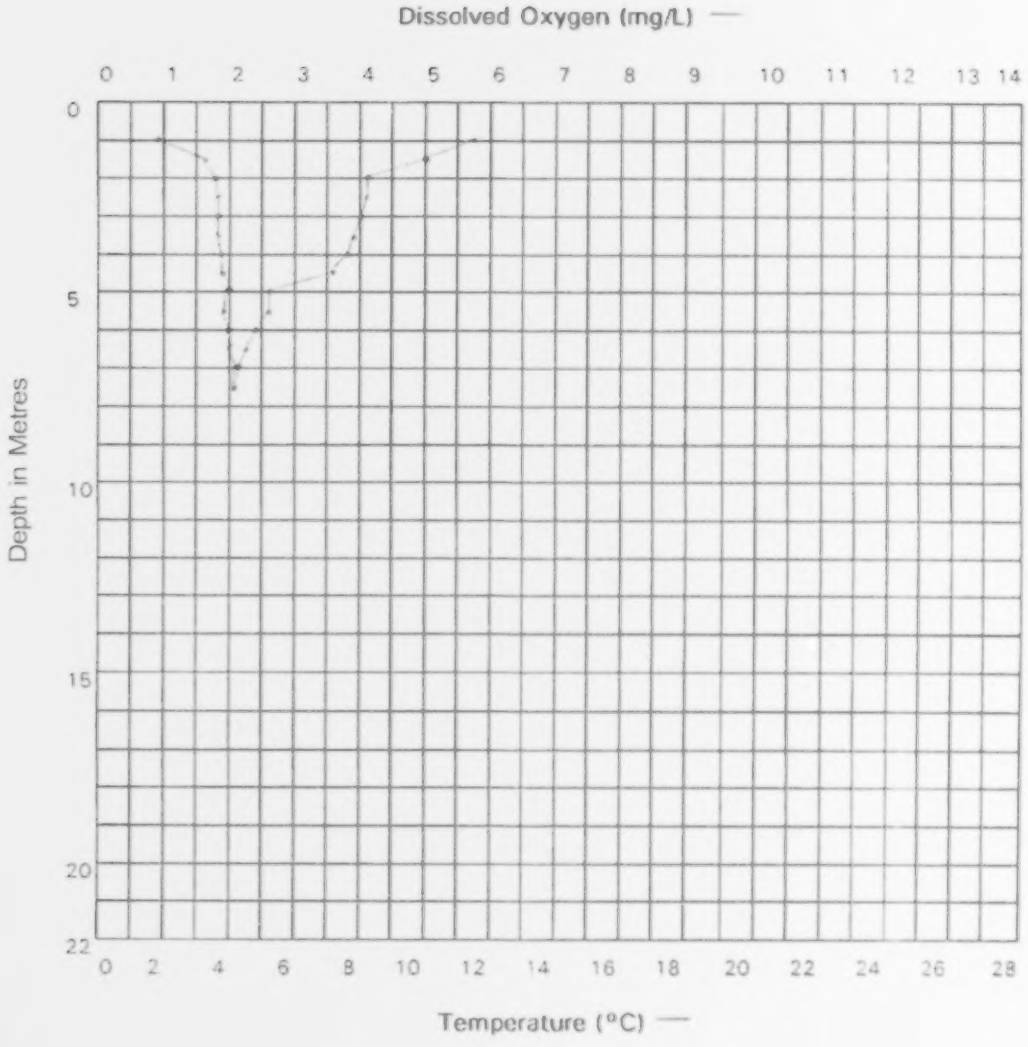
DEPTH (m)	02 (mg/l)	TEMP (°C)
Surface *	-	-
0.5	-	-
1.0	5.8	1.9
1.5	5.0	3.2
2.0	4.1	3.6
2.5	4.1	3.7
3.0	4.0	3.7
3.5	3.9	3.7
4.0	3.8	3.8
4.5	3.6	3.8
5.0	2.6	4.0
5.5	2.6	3.9
6.0	2.4	4.0
6.5	2.3	4.0
7.0	2.2	4.1
7.5	2.1	4.1
8.3	Bottom	

* Surface is referenced from top of ice, i.e. surface = top of ice

Lake: Dina #7

WINTER

DISSOLVED OXYGEN AND TEMPERATURE SERIES



Lake: **Dina #7**

NETTING RECORD

Mesh sizes experimental order: 25, 76, 51, 89, 38, 64 mm

NETTING SITE #1

Type:	Sinking monofilament		
Date Set:	June 4, 1991	Time:	1515 hrs
Date Lifted:	June 5, 1991	Time:	1320 hrs
Net Dimensions:	Length: 91 .4 m	Depth:	2.4 m
Shallow End Mesh Size:	25 mm	Depth:	1.0 m
		Substrate:	fines/lg. cobble
Deep End Mesh Size:	64 mm	Depth:	3.5 m
		Substrate:	fines

Lake: **Dina #7**

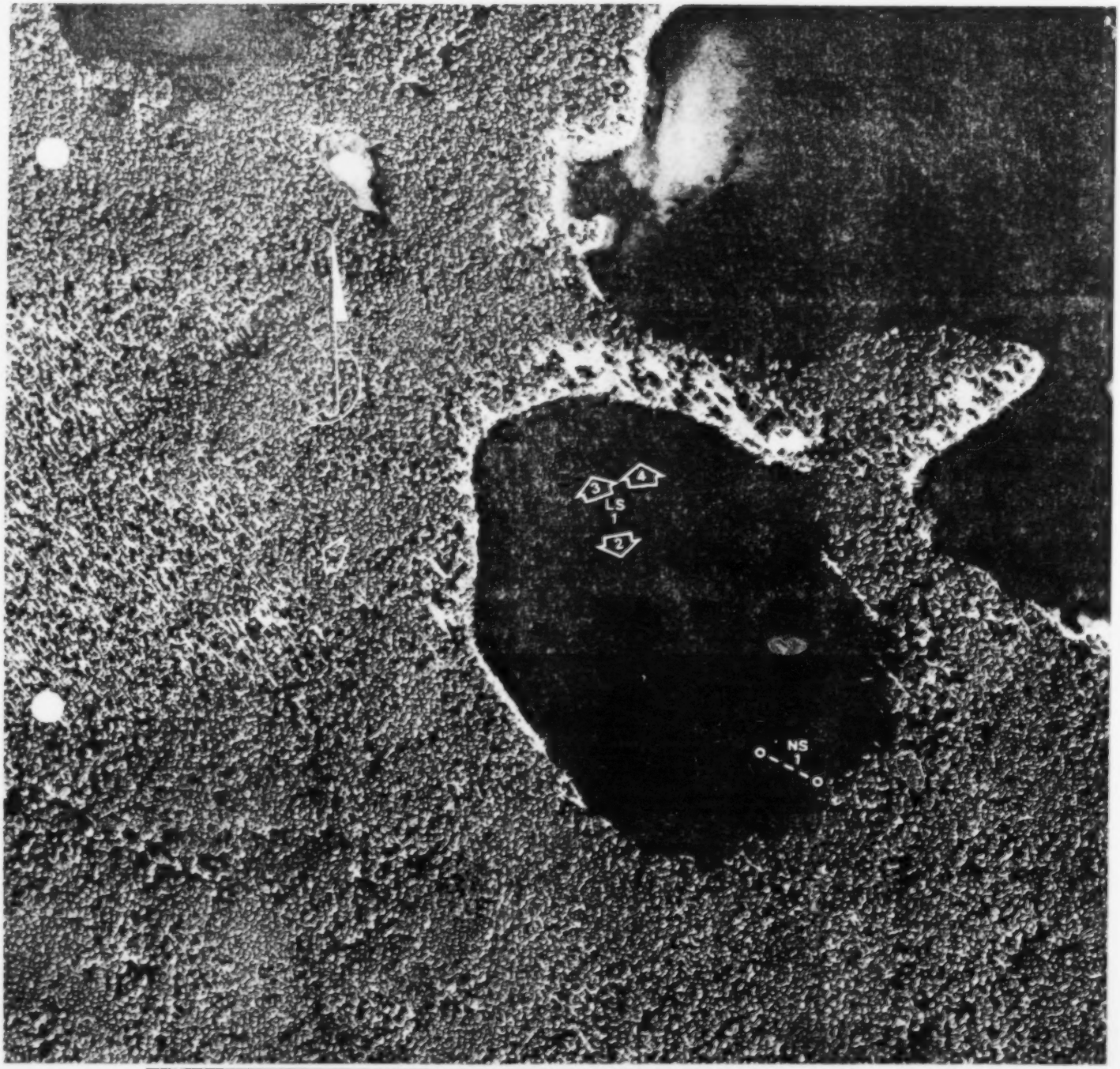
LAKE CATCH SUMMARY

SPECIES	NET SITE NO.				ANGLED	OTHER	TOTAL	NUMBER SAMPLED	NUMBER PRESERVED	SIZE RANGE (cm)
	1	2	3	4						
Nil										

MinnowTraps:

BAIT: Sardines

#	HOURS	DEPTH (m)	SUBSTRATE	SPECIES	SIZE RANGE (cm)
1	22.00	1.0	fines/organics	10 leeches, 1 dragon fly nymph, 3 large beetles	
2	22.00	1.2	fines/organics	12 leeches, dragon fly nymph, 2 large beetles	



1	Plate number, area, and direction
2	Point sample, number, and location
	Bench mark
LS 1	Limno station location and number
0 NS 1 0	Netting site location and number
1	Stream flow direction and number

LOCATION OF INVENTORY SITES

Figure 1

Lake: Dina #7

Reference No.: B.C. 7327:121

Reference Date: July, 1971

Scale 1:3550

Lake: **Dina #7**

PHOTOGRAPH DIRECTORY

Negative #	Plate #	Description
R2:18	1	Aerial view of Dina Lake #7 looking WNW. Note Dina Lake #3 in background.
R2:21,22	2	Panoramic view of Dina Lake #7, looking south from limno station.
R2:19,20	3	Panoramic view of Dina Lake #7, looking north from limno station.
R2:23	4	Low sloping potential recreation/access area on NE shore. This area is a 75 m hike from Dina Lake #3.

Lake: **DINA LAKE #7**

Plate 1:
Aerial view of Dina Lake #7 looking WNW.
Note Dina Lake #3 in background.

Lake: **DINA LAKE #7**

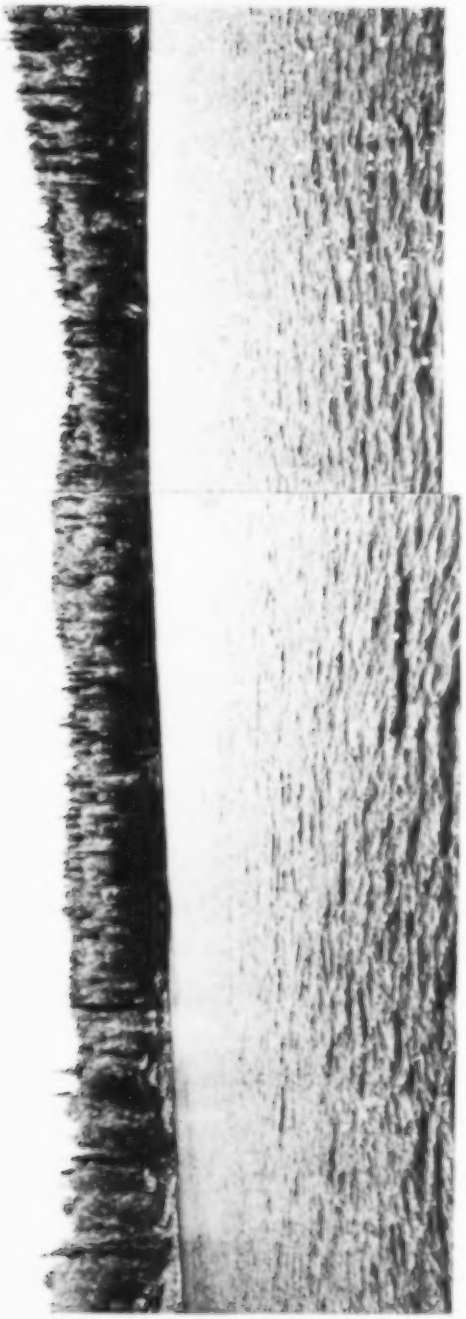


Plate 2: Panoramic view of Dina Lake #7 looking south from limno station.

Lake: **DINA LAKE #7**

Plate 3: Panoramic view of Dina Lake #7 looking north from limno station.

Lake: **DINA LAKE #7**

Plate 4:

Low sloping potential recreation/access area on NE shore. This area is a 75 m hike from Dina Lake #3.

Lake: Dina #7

Appendix A

LABORATORY REPORT

Water Chemistry Analysis

B C LABORATORY SERVICES

Report for Form 03000682

FISH - PRINCE GEORGE ATTN ALLISTER McLEAN

Site NOSITE DINA LAKE #7

Submitted by (23286) BLACKMAN B

Address (07) Waste Management Branch
Northern Region
3rd Floor, 1011 4th Avenue
Prince George, BC V2L 3H9

B.C. MINISTRY OF ENVIRONMENT
JUN 25 1991
RECEIVED
PRINCE GEORGE, B.C.

Phone No. 565-6944

Audit Sample ( )
Client study reference code ( )
Sampling agency code (91)

Site (NOSITE) DINA LAKE #7

Sample Adjective ( )
Sample State (FW) Fresh Water
Sample Descriptor (GE) General

This form was processed to the computer on 11-JUN-1991 as REGULAR
The cost for analyzing samples for this form is

Routine analysis	$	116.84
Special analysis	$	0.00
Total	$	116.84

Site NORTE DINA LAKE #7

From 91/06/05 0001 To 91/06/05 0001
Depth Range 0.0 0.0 Tide
Sample State Fresh Water
Sample Comment

Parameter Description	Result	Units	Analytical Technique (Sparcode/Medium/Pres'n)
pH	7	pH units	Automated pH Meter (00041220/02/01)
Result 7.9 pH units Analyzed outside of optimal time frame.			
Residue Nonfilt	< 1	mg/L	Grav. 9 cm Buchner, 105C (00081070/02/01)
Specific Conductance	157	uS/cm	Cond. Meter Siebold (00111160/02/01)
Res. Filterable 1.0u	96	mg/L	Gravimetric 1.0u Filter (007H1032/02/01)
Alkalinity Total 4.5	7	mg/L	Automated Electrometer (01021210/02/01)
Result 79 1. mg/L. Analyzed outside of optimal time frame.			

FISH - PRINCE GEORGE ATTN ALLISTER McLEAN Sample 91009853

Site: MOSITE DINA LAKE #7

From :91/06/05:0002 To :91/06/05:0002
Depth Range 11.1 11.0 Time
Sample State: Fresh Water
Sample Comment

Parameter Description	Result	Units	Analytical Technique (Sparcode/Medium/Pres'n)
pH	7	pH units	Automated pH Meter (00041220/02/01)
Result 7 /. pH Units Analyzed outside of optimal time frame.			
Residue Nonfilt	1	mg/L	Grav, 9 cm Buchner, 105C (00091070/02/01)
Specific Conductance	195	uS/cm	Cond. Meter Siebold (00111160/02/01)
Res. Filterable 1.0u	114	mg/L	Gravimetric 1.0u Filter (007M1032/02/01)
Alkalinity total 4.5	92.5	mg/L	Automated Electrometer (01021210/02/01)
sult 92.5 mg/L Analyzed outside of optimal time frame			

Reduced to
50%
of Original

NOTES: 1. Denotes BENCH MARK 2. This Map has been prepared for topographical use [illegible]

INSET MAP

SURVEYED BY A.R. MILLAR DATE JUNE 4, 1981
OUTLINE SOURCE AIRPHOTO BC 7727 21-JULY-1978

STATISTICS AT TIME OF SURVEY

ELEVATION	690 m. A.S.L.
SURFACE AREA	69,300 sq. m.
AREA ABOVE 6m. CONTOUR	38,900 sq. m.
VOLUME	356,020 cu. m.
MEAN DEPTH	5.1 m.
MAX. DEPTH	11.7 m.
PERIMETER, MAIN SHORE	1,000 m.
PERIMETER, ISLANDS	m.
BENCH MARK HEIGHT ABOVE WATER LEVEL	2.0 m.

Province of British Columbia
Ministry of [illegible]

FISHERIES BRANCH
INVENTORY OPERATIONS

DINA LAKES (#7)

DEPTHS IN METERS

WATERSHED CODE 237-8339-756-479-000	UTM COORDINATE [illegible]	
MAP 7-30	FAIRLINE 8.0.2	DEV. DATE
PLOTTING R.S.D.	FAIRLINE CHECK D.M.C.	SCALE 1:1000
CONTOURS J.A.P.	DRAFT DATE FEB 20, 1982	
ALTIMETERS D.M.C.	APPROVED [signature]	FILE NO. 930/11
TOPO CHECK D.M.C.		